Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously presented) A composition for use in nucleic acid synthesis, nucleic acid amplification, sequencing or restriction digestion, said composition comprising a mixture of reagents at working concentrations, wherein said reagents are at least one thermostable enzyme and at least one buffer salt, and wherein said composition has no nucleic acid molecules.

2. (Previously presented) A composition for use in nucleic acid amplification comprising a mixture of reagents at working concentrations, wherein said reagents are at least one thermostable DNA polymerase, at least one buffer salt and at least one deoxynucleoside triphosphate, and wherein said composition has no nucleic acid molecules.

3. (Previously presented) A composition for use in nucleic acid sequencing comprising a mixture of reagents at working concentrations, wherein said reagents are at least one thermostable DNA polymerase, at least one deoxynucleoside triphosphate, at least one dideoxynucleoside triphosphate and at least one buffer salt, and wherein said composition has no nucleic acid molecules.

4. (Cancelled)

5. (Original) The composition of claim 2 or claim 3, wherein said thermostable DNA polymerase is selected from the group of thermostable DNA polymerases consisting of a *Taq* DNA polymerase, a *Tne* DNA polymerase, a *Tma* DNA polymerase, and mutants thereof.

6. (Original) The composition of claim 2 or claim 3, wherein said thermostable DNA polymerase is selected from the group of thermostable DNA polymerases consisting of a *Pfu* DNA polymerase, a *Pwo* DNA polymerase, VENT™ DNA polymerase, DEEPVENT™ DNA polymerase, and mutants thereof.

7. (Original) The composition of claim 5, wherein said mixture further comprises DEEPVENT™ DNA polymerase or VENT™ DNA polymerase.

8. (Original) The composition of claim 5, wherein the concentration of *Taq* DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

9. (Original) The composition of claim 8, wherein the concentration is about 20 units per milliliter.

10. (Original) The composition of claim 5, wherein the concentration of *Tne* DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

11. (Original) The composition of claim 10, wherein the concentration is about 20 units per milliliter.

12. (Original) The composition of claim 5, wherein the concentration of *Tma* DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

13. (Original) The composition of claim 12, wherein the concentration is about 20 units per milliliter.

14. (Original) The composition of claim 6, wherein the concentration of VENT™ DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

15. (Original) The composition of claim 14, wherein the concentration is about 20 units per milliliter.

16. (Original) The composition of claim 6, wherein the concentration of DEEPVENT™ DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

17. (Original) The composition of claim 16 wherein the concentration is about 20 units per milliliter.

18. (Original) The composition of claim 6, wherein the concentration of *Pfu* DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

19. (Original) The composition of claim 18 wherein the concentration is about 20 units per milliliter.

20. (Original) The composition of claim 6, wherein the concentration of *Pwo* DNA polymerase or mutant thereof is about 0.1 to 200 units per milliliter.

21. (Original) The composition of claim 20 wherein the concentration is about 20 units per milliliter.

22. (Original) The composition of claim 7, wherein the concentration of DEEPVENT™ DNA polymerase or VENT DNA polymerase is about 0.002 to 200 units per milliliter.

23. (Original) The composition of claim 22, wherein the concentration is about 0.40 units per milliliter.

24. (Original) The composition of claim 2 or claim 3, wherein said DNA polymerase retains at least 90% of the enzymatic activity for at least four weeks when stored at about 20°C to 25°C.

25. (Original) The composition of claim 5, wherein said DNA polymerase retains at least 90% of the enzymatic activity for at least one year when stored at about 4°C.

26. (Original) The composition of claim 2 or claim 3, further comprising a magnesium salt.

27. (Original) The composition of claim 2 or claim 3, further comprising at least one nonionic detergent.

28. (Original) The composition of claim 2 or claim 3, wherein the concentration of said deoxynucleoside triphosphate is about 200 to about 300 micromolar.

29. (Original) The composition of claim 3, wherein the concentration of said dideoxynucleoside triphosphate is about 0.08 to about 5 micromolar.

30. (Previously presented) A nucleic acid amplification kit comprising one or more containers, wherein a first container contains a composition comprising a mixture of reagents at working concentrations, wherein said reagents are at least one thermostable DNA polymerase, at least one buffer salt, and at least one deoxynucleoside triphosphate, and wherein said composition has no nucleic acid molecules.

31. (Previously presented) A nucleic acid sequencing kit comprising one or more containers, wherein a first container contains a composition comprising a mixture of reagents at working concentrations, wherein said reagents are at least one thermostable DNA polymerase, at least one buffer salt, at least one deoxynucleoside

triphosphate and at least one dideoxynucleoside triphosphate, and wherein said composition has no nucleic acid molecules.

32. (Cancelled)

33. (Original) A method of amplifying a nucleic acid molecule comprising contacting said nucleic acid molecule with the composition of claim 2.

34. (Cancelled)

35. (Original) A method of sequencing a nucleic acid molecule comprising contacting said nucleic acid molecule with the composition of claim 3.

36. (Original) A method of sequencing a nucleic acid molecule comprising contacting said nucleic acid molecule with a composition selected from the group consisting of :

a composition comprising a thermostable 3' exo+ DNA polymerase and a thermostable 3' exo- DNA polymerase wherein the concentrations of said 3' exo+ DNA polymerase and of said 3' exo- DNA polymerase are equal, and

a composition comprising a thermostable 3' exo+ DNA polymerase and a thermostable 3' exo- DNA polymerase wherein the concentration of said 3' exo+ DNA polymerase is higher than the concentration of said 3' exo- DNA polymerase.

37. (Currently amended) The method of any one of claims ~~33-36~~ 33, 35 and 36, wherein said nucleic acid molecule is larger than about 4 kilobases in size.

38. (Original) The method of claim 37, wherein said nucleic acid molecule is larger than about 7 kilobases in size.

39. (Original) The method of claim 38, wherein said nucleic acid molecule is larger than about 8 kilobases in size.

40-43. (Cancelled)

44. (Original) The composition of claim 1, further comprising at least one antibody that specifically binds to said thermostable enzyme.

45. (Original) The composition of claim 2 or claim 3, further comprising at least one antibody that specifically binds to said thermostable enzyme.

46. (Original) The kit of claim 30 or claim 31, wherein said mixture of reagents further comprises at least one antibody that specifically binds to said thermostable DNA polymerase.

47. (Original) The kit of claim 30 or claim 31, further comprising one or more additional containers containing at least one antibody that specifically binds to said thermostable DNA polymerase.

48. (Previously presented) The composition of claim 1, wherein said composition is stable upon storage.

49. (Previously presented) The composition of claim 2, wherein said composition is stable upon storage.

50. (Previously presented) The composition of claim 3, wherein said composition is stable upon storage.

51. (Previously presented) The nucleic acid amplification kit of claim 30, wherein said composition is stable upon storage.

52. (Previously presented) The nucleic acid sequencing kit of claim 31, wherein said composition is stable upon storage.

53. (Previously presented) The composition of claim 1, further comprising at least one nonionic detergent.

54. (Previously presented) The composition of claim 53, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100® , Brij 35, Tween 20 and Nonidet P-40 (NP-40).

55. (Previously presented) The composition of claim 27, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100® , Brij 35, Tween 20 and Nonidet P-40 (NP-40).

56. (Previously presented) The nucleic acid amplification kit of claim 30, further comprising at least one nonionic detergent.

57. (Previously presented) The nucleic acid amplification kit of claim 56, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100® , Brij 35, Tween 20 and Nonidet P-40 (NP-40).

58. (Previously presented) The nucleic acid sequencing kit of claim 31, further comprising at least one nonionic detergent.

59. (Previously presented) The nucleic acid sequencing kit of claim 58, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100® , Brij 35, Tween 20 and Nonidet P-40 (NP-40).